

Docket No.: CL001099 CIP DIV2

Serial No.: To be assigned

Inventors: Douglas RUSCH et al.

Title: ISOLATED HUMAN KINASE PROTEINS...

```
1 TCGCGGCCCA GGTGGTGCGG GCGGCCCTAG CCCGCTGCG GAGCGCTGCG
51 CGAGCGGCGG GCTGGCTGAC CCCGAGGGAC CCCAGCGCA GCGGGTGCGG
101 CGATGATCCT GGAGGAGAGG CCGGACGGCG CGGGCGCCGG CGAGGAGAGC
151 CCGCGGCTGC AGATATCTAG GAGAAAACCC AGGAAAACAC GTGTGAGCTC
201 TTTACGGGGA AGACGGGAAG GCCTGAGAGA CGTGTGTGCG TGGAGAGGGT
251 GTCGGGTCCA CAGAGGGGAA GACCCAGTGC GTGTGCACGT TGGCCCCATG
301 AATCCGCAGC TTCATGCAGT GGGCTGTGAC TCCCTGACGC AGATCCAGTG
351 CGGCCAGCTG CAGAGCCGCA GGGCCCAGAT TCACCAGCAG ATTGACAAGG
401 AGCTGCAGAT GCGGACGGGC GCTGAGAAC TCTACAGAGC CACCAGCAAC
451 AACC GGGTGA GAGAGACGGT CGCCCTGGAG CTGAGCTACG TCAACTCCAA
501 CCTGCAGCTG CTGAAGGAGG AGCTGGAGGA GCTCAGCGGT GGCGTGGACC
551 CTGGCCGGCA TGGGAGCGAA GCTGTCACTG TCCCCATGAT CCCCTGGGC
601 CTGAAGGAGA CCAAGGAGCT GGAAGGCTGT ACACCGCTGA AGGAGCTGAT
651 CTCAGTGCAC TTTGGGAGAG ACGGCGCCTC CTACGAGGCA GAAATCAGGG
701 AGCTGGAGGC CCTGCGGCAG GCCATGCGGA CCCCCAGCCG GAATGAGTCG
751 GGCCTGGAGC TGCTCACAGC CTATTACAAC CAGCTGTGCT TCCTGGATGC
801 GCGCTTCTC ACCCCTGCCA GGAGCCTCGG GCTCTTCTC CACTGGTACG
851 ACTCGCTTAC TGGGGTCCCG GCCCAGCAGC GTGCCCTGGC CTTCGAGAAG
901 GGCAGCGTTC TCTTCAACAT CGGTGCCCTC CACACGCAGA TTGGGGCGCG
951 CCAGGACCGC TCCTGCACCG AGGGTGCCCG CCGCGCTATG GAGGCCTTCC
1001 AGAGGGCCGC TGGGGCCTTC AGCCTCCTGA GGGAGAACTT CTCCCATGCG
1051 CCGAGCCCAG ACATGAGCGC TCGTCCCTC TCGCACTGG AGCAGCTCAT
1101 GATGGCCAG GCCCAGGAAT GTGTGTTGA GGGCCTCTCA CCACCTGCCT
1151 CCATGGCCCC CCAAGACTGC CTGGCCAGC TCGCCTGGC GCAGGAGGCC
1201 GCCCAGGTGG CAGCCGAGTA CAGGCTAGTG CACCGGACCA TGGCCCAGCC
1251 ACCCGTCCAC GACTACGTGC CTGTCTCTG GACTGCCCTG GTGCATGTCA
1301 AGGCCGAGTA CTTCCGCTCC CTGGCCCACT ACCACGTAGC CATGGCCCTC
1351 TGCGACGGCT CCCCAGCGAC CGAGGGAGAG CTCCCCACGC ACGAGCAGGT
1401 CTTCTGCGC CCCCCACCT CCTCTAAGCC CCGAGGCCCT GTGTGCCGC
1451 AGGAGCTGGA GGAGCGCAGG CAGCTTGGCA AGGCACACCT GAAGCGTGCC
1501 ATCTTGGGGC AGGAGGAGGC GCTGCGGCTG CACGCCCTGT GCCGCGTCCT
1551 GCGCGAGGTG GACCTGCTTC GGGCTGTGAT CTCCAGACG CTGCAGCGCT
1601 CACTGGCCAA GTATGCGGAG CTCGACCGTG AGGATGACTT CTGTGAGGCT
1651 GCCGAGGCCC CGGACATCCA GCCTAAGACC CACCAGAAGC CAGAGGCCAG
1701 GATGCCACGC CTGTCCCAGG GGAAGGGGCC TGACATCTTC CATCGGCTGG
1751 GGCCCCCTGC TGTGTTCTCA GCCAAGAACC GGTGGCGGCT GGTGGGGCCC
1801 GTCCACCTGA CCCGAGGAGA GGGCGGCTTT GGCTCACGC TTCGGGGAGA
1851 CTCGCCTGTC CTCATCGCTG CCGTCATTCC AGGGAGCCAG GCCGCGGCGG
1901 CTGGCCTGAA GGAGGGCGAC TACATTGTGT CAGTGAATGG GCAGCCATGC
1951 AGGTGGTGGA GACACGCGGA GGTGGTGACG GAGCTGAAGG CTGCGGGAGA
2001 GGCGGGCGCC AGCCTGCAGG TGGTGTGCTG GCTGCCAGC TCTAGACTGC
2051 CCAGCTTGGG GGACCGCCGG CCCGTCTGTC TGGGCCCCAG GGGGCTTCTA
2101 AGGAGCCAGA GGGAGCATGG TTGCAAGACC CCGGCATCCA CGTGGGCCAG
2151 TCCCCGGCCC CTCCTCAACT GGAGCCGAAA GGCCAGCAGG GGCAAGACTG
2201 GAGGCTGCCC CCAGCCCTGT GCCCAGTGA AGCCAGCTCC GCCCTCATCC
2251 TTGAAGCACC CAGGGTGGCC GTGAGGGCCA GGATCCCTGC ACGCCCTCAG
2301 CCCTGGCTCC AGCTGGCAGC AAGCACCGAG CATGCCCTCC CCACCCAGAG
2351 GACCTCCGGG CAATGCCTGT CCCGCTCAT GCTGGAGGCT GCCTCGGGCA
2401 CCTGCCTGCC CATTAAAGAC TGGTCAGACC TGTCTGAAAA AAAAAAAAAA
2451 AAAAAAAAAA AAAAAAAAAA (SEQ ID NO:1)
```

**FEATURES:**

5'UTR: 1-102  
Start Codon: 103  
Stop Codon: 2272  
3'UTR: 2275

FIGURE 1A

**Homologous proteins:**

Top 10 BLAST Hits

					Score	E
CRA	18000005019652	/dataset=nraa /length=643 /altid=gi	6680085 ...	930	0.0	
CRA	18000005229461	/dataset=nraa /length=718 /altid=gi	4868350 ...	393	e-108	
CRA	89000000195700	/dataset=nraa /length=648 /altid=gi	7293132 ...	309	7e-83	
CRA	163000000492107	/dataset=nraa /length=1345 /altid=gi	795920...	116	7e-25	
CRA	18000005101898	/dataset=nraa /length=775 /altid=gi	7492978 ...	112	2e-23	
CRA	18000005055009	/dataset=nraa /length=861 /altid=gi	3785952 ...	105	2e-21	
CRA	18000004878869	/dataset=nraa /length=882 /altid=gi	466013 /...	105	2e-21	
CRA	18000005242118	/dataset=nraa /length=816 /altid=gi	5103812 ...	104	3e-21	
CRA	1000682341924	/dataset=nraa /length=868 /altid=gi	7019487 /...	99	2e-19	
CRA	18000005212030	/dataset=nraa /length=867 /altid=gi	4416376 ...	98	4e-19	

BLAST dbEST hits:

gi	9121454	/dataset=dbest /taxon=9606...	1207	0.0
gi	9344702	/dataset=dbest /taxon=960...	922	0.0
gi	6702051	/dataset=dbest /taxon=9606 ...	676	0.0
gi	12066980	/dataset=dbest /taxon=96...	672	0.0
gi	9098957	/dataset=dbest /taxon=9606...	672	0.0
gi	9202467	/dataset=dbest /taxon=960...	650	0.0
gi	8008394	/dataset=dbest /taxon=960...	628	e-177
gi	11295927	/dataset=dbest /taxon=96...	599	e-168
gi	4649738	/dataset=dbest /taxon=9606 ...	595	e-167

**EXPRESSION INFORMATION FOR MODULATORY USE:**

library source:

Expression information from BLAST dbEST hits:

gi	9121454	Eye retiniblastoma
gi	9344702	Placenta choriocarcinoma
gi	6702051	Germ cells
gi	12066980	bocio_tumor
gi	9098957	Pediatric pre-B cell acute lymphoblastic leukemia
gi	9202467	Kidney 2 pooled Wilm's tumors
gi	8008394	Uterus tumor
gi	11295927	Brain anaplastic oligodendroma
gi	4649738	Uterus well-differentiated endometrial adenocarcinoma

Expression information from PCR-based tissue screening panels:

Human leukocyte

**FIGURE 1B**

Docket No.: CL001099 CIP DIV2

Serial No.: To be assigned

Inventors: Douglas RUSCH et al.

Title: ISOLATED HUMAN KINASE PROTEINS...

```
1 MILEERPDGA GAGEESPRLO ISRRKPRKTR VSSLRGRREG LRDVCAWRGC
51 RVHRGEDPVR VHVGPMPNPQL HAVGCDSLQ IQCGQLQSRR AQIHQQIDKE
101 LQMRTGAENL YRATSNRVR ETVALELSYV NSNLQLLKEE LEELSGGVDP
151 GRHGSEAVTV PMIPGLKET KELDWSTPLK ELISVHFGED GASYEAEIRE
201 LEALRQAMRT PSRNESGLEL LTAYYNQLCF LDARFLTPAR SLGLFFHWYD
251 SLTGVPAAQR ALAFKGSVL FNIGALHTQI GARQDRSCTE GARRAMEAFQ
301 RAAGAFSLR ENFSHAPSPD MSAASLCALE QLMMQAQEC VFEGLSPPAS
351 MAPQDCLAQL RLAQEAQVA AEYRLVHRTM AQPPVHDYVP VSWTALVHVK
401 AEYFRSLAHY HVAMALCDGS PATEGELPTH EQVFLQPPTS SKPRGPVLPQ
451 ELEERRQLGK AHLKRAILGQ EEALRLHALC RVLREVDLLR AVISQTLQRS
501 LAKYAELDRE DDFCEAAEAP DIQPKTHQKP EARMPRLSQG KGPDIHRLG
551 PLSVFSAKNR WRLVGPVHLT RGEFGFGLTL RGDSPVLIAA VIPGSQAAAA
601 GLKEGDYIVS VNGQPCRWWR HAEVVTELKA AGEAGASLQV VSLLPSSRLP
651 SLGDRRPVLL GPRGLLSQR EHGCKTPAST WASPRPLLNW SRKAQQGKTG
701 GCPQPCAPVK PAPPSSLKHP GWP (SEQ ID NO:2)
```

**FEATURES:**

**Functional domains and key regions:**

[1] PDOC00001 PS00001 ASN\_GLYCOSYLATION  
N-glycosylation site

Number of matches: 3

```
1 214-217 NESG
2 312-315 NFSH
3 689-692 NWSR
```

[2] PDOC00005 PS00005 PKC\_PHOSPHO\_SITE  
Protein kinase C phosphorylation site

Number of matches: 12

```
1 16-18 SPR
2 683-685 SPR
3 22-24 SRR
4 88-90 SRR
5 33-35 SLR
6 22-24 SRR
7 88-90 SRR
8 440-442 SSK
9 556-558 SAK
10 579-581 TLR
11 646-648 SSR
12 668-670 SQR
```

[3] PDOC00006 PS00006 CK2\_PHOSPHO\_SITE  
Casein kinase II phosphorylation site

Number of matches: 8

```
1 105-108 TGAE
2 212-215 SRNE
3 216-219 SGLE
4 287-290 SCTE
5 423-426 TEGE
6 570-573 TRGE
7 651-654 SLGD
8 668-671 SQRE
```

[4] PDOC00007 PS00007 TYR\_PHOSPHO\_SITE  
Tyrosine kinase phosphorylation site

104-111 RTGAENLY

**FIGURE 2A**

[5] PDOC00008 PS00008 MYRISTYL  
N-myristoylation site

Number of matches: 11

1	9-14	GAGAGE
2	84-89	GQLQSR
3	147-152	GVDPR
4	166-171	GLKETK
5	274-279	GALHTQ
6	291-296	GARRAM
7	419-424	GSPATE
8	469-474	GQEEAL
9	594-599	GSQAAA
10	601-606	GLKEGD
11	664-669	GLLRSQ

[6] PDOC00009 PS00009 AMIDATION  
Amidation site

35-38 RGRR

[7] PDOC00016 PS00016 RGD  
Cell attachment sequence

581-583 RGD

**Membrane spanning structure and domains:**

Helix	Begin	End	Score	Certainty
1	583	603	1.094	Certain

**BLAST Alignment to Top Hit:**

>CRA|18000005019652 /dataset=nraa /length=643 /altid=gi|6680085  
/def=ref|NP\_032190.1| GTP-rho binding protein 1 [Mus  
musculus] /org=Mus musculus /taxon=10090  
Length = 643

Score = 930 bits (2284), Expect = 0.0

Identities = 471/706 (66%), Positives = 520/706 (72%), Gaps = 72/706 (10%)

Query: 1 MILEERPDGAGAGEESPRQLQISRRKPRKTRVSSLRGRREGLRDVCAWRGCRVHRGEDPVR 60  
MILEERPDG G GEES R  
Sbjct: 1 MILEERPDGQGTGEESSR----- 18

Query: 61 VHVGPMPNQLHAVGCDSLTIQCGQLQSRRAQIHQQIDKELQMRGAENLYRATSNNRVR 120  
P + G S Q Q GQLQS RA++HQQI KEL+MRTGAENLYRATSN VR  
Sbjct: 19 ----PQDDGSIRKGYGSFVQNQPGQLQSHRARLHQQISKELRMRTGAENLYRATSNWVR 74

Query: 121 ETVALELSYVNSNLQLLKEELEELSGGVDPGRHGSEAVTPMIPGLKETKELDWSTPLK 180  
ETVALELSYVNSNLQLLKEEL ELS VD + E +T+PMIPGLKETKELDW+TPLK  
Sbjct: 75 ETVALELSYVNSNLQLLKEELAELESTSVDDVDQPEGEGITIPMIPGLKETKELDWATPLK 134

Query: 181 ELISVHFGEDGASYEAEIRELEALRQAMRTPSRNESGLELLTAYYNQLCFLDARFLTPAR 240  
ELIS HFGEDG S+E EI+ELE LRQA RTPSR+E+GL+LL AYY+QLCFLDARF +P+R  
Sbjct: 135 ELISEHFGEDGTSFETEIQELEDLRQATRTPSRDEAGLDLLAAYYSQLCFLDARFFSPSR 194

Query: 241 SLGLFFHWDYSLTGVPAAQQRALAFKGSVLFNIGALHTQIGARQDRSCTEGARRAMEAFQ 300  
S GL FHWYDSLTVPAQQRALAFKGSVLFNIGALHTQIGARQD SCTEG A EAFQ  
Sbjct: 195 SPGLLFHWDYSLTGVPAAQQRALAFKGSVLFNIGALHTQIGARQDCSCTEGTNHAAEAFQ 254

Query: 301 RAAGAFSLLRENFSHAPSPDMSAASLCALEQLMMAQAQECVFEGLSPPASMAPQDCLAQL 360  
RAAGAF LLRENFSHAPSPDMSAASL LEQLM+AAQAEQEC+F+GL PAS P C QL

FIGURE 2B

Docket No.: CL001099 CIP DIV2  
Serial No.: To be assigned  
Inventors: Douglas RUSCH et al.  
Title: ISOLATED HUMAN KINASE PROTEINS...

Sbjct: 255 RAAGAFRLLLRENFSHAPSPDMSAASLSMLEQLMIAQAQECIFKGLLLPASATPDICPDQL 314

Query: 361 RLAQEAAQVAEYRLVHRTMAQPPVHDYVPVSWTALVHVKA EYFRSLAHYHVAMALCDGS 420  
+LAQEAAQVA EY LVHR MAQPPV DY+P SWT L HVKAE+F +LAHYH AMALC+

Sbjct: 315 QLAQEAAQVATEYGLVHRAMAQPPVRDYLPAWNTLAHVKA EHFALAHYHAAMALCESH 374

Query: 421 PATEGELPTHEQVFLQPPTSSKPRGPVLPQELEERRQLGKAHLKRAILGQEEALRLHALC 480  
PA +GEL E VF QP T +P GP LPQ E+RR+L KAHLKRAILGQEEALRLH LC

Sbjct: 375 PA-KGELARQEHVF-QPSTPHEPLGPTLPQHPEDRRKLAKAHLKRAILGQEEALRLHTLC 432

Query: 481 RVLREVDLLRAVISQTLQRLAKYAELDREDDFCEAAEAPDIQPKTHQKPEARMRLSQG 540  
RVLRL+VDLL+ V++Q L+RSLAKY++L+REDDF EA EAPDIQPKTHQ PE

Sbjct: 433 RVLRKVDLLQVVVTQALRRSLAKYSQLEREDDFEATEAPDIQPKTHQTPE----- 483

Query: 541 KGPDIFHRLGPLSVFSKNNRWRLVGPVHLTRGEGGFGLTLRGDSPVLIAAVIPGSQAAAA 600  
GPLSVFS KNRW+LVGPVH+TRGEGGFGLTLRGDSPVLIAAV+PG QA +A

Sbjct: 484 -----GPLSVFSTKNRWQLVGPVHMTREGGFGFTLRGDSPVLIAAVPGQAESA 534

Query: 601 GLKEGDYIVSVNGQPCRWWRHAEVVTELKAAGEAGASLQVVSLLPSSRLPSLGDRRPVLL 660  
GLKEGDYIVSVNGQPC+WW+H EVVT+L++ GE G SLQVVSLLPS G RR LL

Sbjct: 535 GLKEGDYIVSVNGQPCWKWKHLEVVTLQRLSMGEEGVSLQVVSLLPSPEPRGTGPRRAALL 594

Query: 661 GPRGLLRQREHGCKTPASTWASPRPLLNWSRKAQQGKTGGCPQPC 706  
+QRE G +TP T P P+L WSRK +QGKTG P PC

Sbjct: 595 W-----NQRECGFETPMPTRTRPWPILGWSRKNKQKGTGSHPDPC 634 (SEQ ID NO:4)

**Hammer search results (Pfam):**

Model	Description	Score	E-value	N
PF00595	PDZ domain (Also known as DHR or GLGF).	46.4	9e-12	1

**Parsed for domains:**

Model	Domain	seq-f	seq-t	hmm-f	hmm-t	score	E-value
PF00595	1/1	566	644	..	1 79 [.	46.4	9e-12

**FIGURE 2C**

Docket No.: CL001099 CIP DIV2

Serial No.: To be assigned

Inventors: Douglas RUSCH et al.

Title: ISOLATED HUMAN KINASE PROTEINS...

```
1 CCACCCTGTC TCAAAAAAAA AAAAAAAGGC CAGTCACAGT GGCTCACACC
51 TATAATCCCA ACACCTTTGGG AGGCCAAGGC AGGCAGATCA CTGGAGCTCA
101 GAAGTTCAAG ACCAGCCTGG GCAACAGGGC GAAACCCTGT CTCAATTTT
151 TTTTCCTTTA TAAATTACAA AAGAGAAAAC GAGCATAAAG CAGCCCCATC
201 AGCAATTATC ACCTCATCTG CAAAAGGTCC CGGCGCTCAC TGCCGTGCCC
251 CTCCCGCCGC TGTCCAGTTC CCTGCCTGTC ACACCAAAAT TCTCCTCTAC
301 TTTCTCACCT CCCATCCTTT CATTTTTTCCC CCTAAATTTT TAAACTTCAG
351 AAGTGCACAA TACACATGTA ACAAACCCAC ACATGTACCT CCAAATCTAA
401 AATAATTTAA AAAAACAAAA AGGAAACTCT AAATTTTTTT AGTGCAGTGA
451 TACATTCTTG CTGTGCCAAA TCCAGTAACA CAGAAGCATG CAAAGAAAAA
501 GGCAGCACCA CCCCCCTCCA ACACACACAC ACACACACAC ACACGCACAC
551 ACGCACATAT GCACGCACAC ACACGCACAC GCACACACGC ACACGCACAC
601 ACTCCAGCCT GCGGACAAAG AGCAAGACTC CATCTCAATA AATAAATAAA
651 GAAAATAGTA ATTGAATATT TTCCTTCAGG AAACAGCACC CTGCAGGGAG
701 GGGAAGTCTT ATGACCCTCA AAGTTTGAGA GCCTCTCTTA ACTTCCCAAT
751 GGCCTCTGTC TGCTGAACCA AGAAGCCTGC AAAACAAATA CGTAAGAACT
801 GGATACCATT TCAGTCACAC ATGCTTGCTG ACAGTCACAT ATATGGTAAT
851 GCCTCCTGTA CACATAGCTG ACTCTGAAGA CTGCTAAGAG GGTTTGGGTC
901 TCTGCTGTAC AGGACCTTGG CAGCCTGCAA GGAGATGACT CACATGGAAG
951 TCCCCACACA AGTGCACCCA GTGTGAACTT TGGAAGCATC GGCCCATGCT
1001 CAGGCCCCACA GGTAAGATGG CCAGGAGCCC CTGCCCTTGA GGAAACTTGA
1051 ACCACAGAGC TGCTGGCGAA GGGGGTGGGT GAAGGTCTCA TGTAGCCTGT
1101 GTGATTCAAG CAGAAGTGAG AAGGACGGGT GGGAACCCAC CAAGTGGACG
1151 ACAAGCTGAA GGGCTCCCAG GGAGCAGACA CTTCAAGGGC CCCAAAAGGC
1201 CAGGAGAAAG AAAAAAAAAA GCCGGGTATG GTGGCTCATC CTTGTAATCC
1251 AGCACTTTTG GAGGTTGAG GCAGATGAAT TGCTTGAGCG CAGAAGTTTG
1301 AGACCAGCCT GGGCCTGGGC AATGTGGCGA AACCCTGTCT CTACAAAATA
1351 TACAAAAATT AGCCGGGTGT GGTGGTGCAA GCCTGTAGTC CCAGCTATTC
1401 AGGAGGCTGA GGTGGGAGGA TCACATGAGC CCAGGAGGTG GAGGCTGCAG
1451 TGAGCTGTGA TCGTACCACT GCACTCCGCG CTGGGGAACA GAGTGAGGCC
1501 CTGTCTCAAA AGGCCAGGAG TGGAAGACAG GCCCTAGCCA GGAGGTTTCA
1551 CGTGGCTGGC AGGGCCCTTA TGAGAAGGCT GTTGCTGGGA GGGGCTGCT
1601 GCAGATGGCT GCGGCAGACC ACGGAGCTTA GCCTTCAGGA TTTAGATCTG
1651 GGGATGACAG GCTCCTGTGT GCTTGTGCG GAGCCGGGAG CACAGGCACC
1701 AGAATGATCC CAGGGCTCAG CTCCAAGGCT CCGCTGGGCC TGTGGTGGG
1751 CAGTGAACGT GGACAAGACC TGGGCTTCAG AGGAACTTGA TGACCAGGAG
1801 CCGTGGTTAC CGCCTGTGCC CTGGCCTTCC TGCTCTTCAA AGGGTGTGTT
1851 CTGAGCTGAG GCGAGACCCA CACGAAATCC GAGCGGGCTC CGGAGTCACC
1901 AGACACCTAG AGAAGTATGG AAGGCCCGGA AGGACACACA CAGCCGGGTG
1951 AGCCCCGAGG GGAGCTGTGC AGTCTCAGGT CGTCCAGTCC TGGGGCTGCA
2001 GGCCAGTTCT CCAAGCAGGT GGTCTTGAG GCAAGCTGGT TTTGAAAGTA
2051 GGTTCTGAAA ATAGGTCAGT CCAGGAAACA AGCTCTGGA GTAAAGAGAT
2101 TCGGAAAGCA GGTTCGTCTT GGAAACAAGT TCTACAAACA GGTAAGTCTG
2151 AAAGCACGTG GGTTCAGAG GCAGGTGCTA GAAGGATGTG GGTTCTGTAC
2201 GGAGGTTCTG GAGGGAGGCG GGTTCGTGAC GGAGGTTTCC GAAGGAGGCG
2251 GGTTCTGGAG GCCGGTTTTC GAAGCAGGAC GACACCGACA GAGGCGCCTC
2301 GGAAGTGGGC CAGGCCTGGA GCCTCCGCTC CGCGGGCAGA GAGAAGAAAG
2351 CAGGCATTGT CGGAGGACTC ACACAAGCAC TTGTCCCTAA CAAAACCGTT
2401 TTTAAAAACC CCATTGTGAA CATTTTTTGA ACAAGCCTCT TAGAGGGTCC
2451 CGTTGCCGGG GTGACAGGAC GAAACGGCGC GAGCGGGCAG ACTCCTGGAG
2501 TCCCCGCAAA GGGAGCCGAG GAGCTAGGCG CGCCGAGTCC AGGTCCGCCC
2551 TGACTCTCAG CTTGGGACGT TCCGTATAGT TTTTTTCTCC GTTTCCCGAA
2601 CTTCTCCCGC ACGCTCAGCG GCCGCCGCGG CGCATGCGCA GTACAACCTG
2651 CCAGCCAGCC GCGGGCGTTC CGGCCGCGGT TGCCAGGGGT TACCGTCCCG
2701 CGGGCGGGCG GAGCTGGCCG TCCAGAGCCC GCCTTCCTGG AACTCTGGTT
2751 GGCTGATATA GCTGTCCGTC GAAGCGGCAT TGCCGCTAT TGGGCAATGG
2801 CCAGCTTCGC ACGCCAGACC CGTGCCCCGC CCAGCCGCGC CGCGGGCCGC
2851 CCCCACCTAG GAGGGACAGT CGGGGACCGG CGCGGGCACT CAGGAGCCCG
2901 CGGCCCAGGT GGTGCGGGCG GCCCTAGCCC GGCTGCGGAG CGCTGCGCGA
2951 GCGGCGGGCT GGCTGACCCC GAGGGACCCC CAGCGCAGCG GGTGCGGCGA
3001 TGATCCTGGA GGAGAGGCGG GACGGCGCGG GCGCCGCGCA GGAGAGCCCG
3051 CGGCTGCAGG TGCGCAGAAC TGGCGCGCGG GCGGGAGGAG GGGCCCGGAA
```

FIGURE 3A

Docket No.: CL001099 CIP DIV2

Serial No.: To be assigned

Inventors: Douglas RUSCH et al.

Title: ISOLATED HUMAN KINASE PROTEINS...

```
3101 TCCCGGCCTT TTCCTGCCCC CCCTCGAGGC GCGTTCCGGG CGCCCCCTC
3151 CTACGTACTC ATTCGGCCCG GACGCAGGCA GGGAACTGA GGCCAGAGCC
3201 TCGTGGCCCT CCTCCTCTGA GTCGCTGGA GGTGCTTCCA GGCCACTCAT
3251 GTGAGCCGGG AAATGCGGAC AGCCAAAGTC TGGATCATCC TCACCGCTGA
3301 AGCGGGTTGG GGGGACGCCC TCCTCGTGTC CCCCTTCTGG GCGGATGTGG
3351 GGCTGGGATC TGTGAGCGCC CTCCCCACAC CCGCCATCGT GTTCCTTTCC
3401 GGCACCTGTA CAGCCTCCTT CCCTAGTTCT GTCCCTCCCTC TGCATCCGCT
3451 CAGGAAGTGC ATGCCCATTG GGTGCACTGG TAGCAGCGGG CAGCGAAGCC
3501 TCCTGGGTAT GGGAAACCGA GAGAGGTCTT CCCGGCTGGC CTCTTCTCAC
3551 TTCCCAAACC TCCTTCCCTT CTGAAGTCCC TAACCCGGGG TGCTGACTGG
3601 GCAAGTGGGA GGGGTGGGCA GGGCTGTGGA GACCTGCTGA GTCTGTGCCT
3651 GGGAAGGAGG GGACGTCTGT GGGCCTTGCT CTGCAGCCCA GAGCCTGCTT
3701 GTTCCCTGCG GACCAGCTCG AGGCTGCCCC AGTCCTCCTG CCAGGCCCTG
3751 GGCGCCACCG CCCGCCACGG GCTTTCAGCC GCGGGCTGCT CCTGCTCCTC
3801 GCCCCGGGTG AGCCTTTGAT AGCGCGCGGC CCTCCTCCCC TCTGGGACGT
3851 CAGACTGTGT TGTCCCTGGG CTGGTTCTAC TCGGCTTTGG TGTTTGGGGT
3901 TAGGTCTCCT AGAGGAGGAG GCGGTGCTAT CAGCCAGGGT TTGGCTTCAG
3951 GTCAGTGGGC TGGTGATGCT GACCGTAGCC CTCAAGGTCG CCCTTCTTGC
4001 CCACCCCGAG GCGTGCCAGA GGCTGCAGCA CCTCCTGGGC ACTGGAGGGA
4051 AAGAGGCAGC CTGTGCTGCG CCCCTGTGAA CTTGCTCTGT CAGGGCGGCC
4101 ATGCCGTGAG GTGGCCTGGG ACGGCACATG TTGTTTGGG TGGAATGTTT
4151 GGGAGGCTGT ACAAACAAGA TGTCCAGAG GGCTCCGGAG GTGACGCTTT
4201 TCAGGCTGGG GGCTGTGCCT GGGCTCCCTG TCCTGGCCCT CCCTGGGCTG
4251 CCACCTTGGG AAGTTGGGGA GAAGCTGTTT CCAGGCTGCC GTGTCTCTCA
4301 CAGCGTCCAG AAATGACCCC ACAGTCAGGG TACTGGGGAG GGGCCCGTGG
4351 GAGGTGGCAG TGGGGCGGAG GCAGGCCCTG TGTACACGCG GCACCACTCA
4401 GGCTGTCTCG CCATCTGGAA AGTCTTCCCC GATGCCTGCT GCCGGGCTAG
4451 AGTGAGGCCT GTTCCACCCC CATCAGGCTG GCCCCCAAAC TGGCCCTAAA
4501 GCTCAGAGTT CAGTGGGTCA GGGGTCGGTC GTTCATCCAC TTAGAGGCCA
4551 CACCTGGGCC TGAGGCCCTG TGGACAGGTC TGGGTGACTT GTATTGCCCC
4601 CAGGCGTGAT GAGAGCAGGC TTCCAGCAAG CGCTTACCTG GTGCCAGGGC
4651 CAGTGCTACA GCTGGAGTCC TGCCATTGGT GCCTCCCAAG CCCTGGGCCT
4701 CAGCCCCCTA GTGAAACAGG GTGAGTAAGT GGCCAAGGCT GCCAAGCTGG
4751 GAAGGGGAGA AGCCTGGCAC GGCCAGGGT GGCCAACCCA GCTGCCGTCC
4801 CTCCCGCAGG GGCTGCAGGG GCTCCCGGGG GAGGACCACA AGGAATACAG
4851 CCTGGCTGTA TGCAGAAAGT TCTGTGGTTT CCTGGGGAGG CCAGTGGGAG
4901 AAGGGGGAGC AGGCTGCAGA GGGAGAGCGT TGGAGCAGCA GGTGGGCAGG
4951 GTGGCTGTGC CCCCCTCACC TGGTCTCCAG CATGCCAGT GGGTCAGCCT
5001 GAGGTTCCCC CTGGGCTG GACAGGAGCA CCCTCTGGGT GCTGGTTACA
5051 GGTTCCCAGG CCCCTGCCCA GGTAAGATTG GCTCCAGGAA GAGGGGTGCT
5101 CAGGAAGCAC CAGTGCCTGG GTACCCAGG GAGCATCAGA GAGAGTGGGA
5151 GTCCCTGCCG TGAGTGGCCA GTCTATGATT CCTCTGGCGT GCGTGTGCT
5201 TATAGCCCTG TGTCCCAGGA GACACCTGTG CAGCAATGCC CTTTGAATTC
5251 TGTTCCCTCA TCAGTGGGGG GCAGAGATGG TGGGTCAGGT GGGTGTGTTG
5301 CTTCCACCCT CTGGGGCTT CCAGTTCTGT CATTCAAGTG AGACTTCAGT
5351 GGGGGCAGAG GAGAGGGGTA CCTGAGATGG GTGGCTGTCA GCATACAGGG
5401 TGCCCAGGGC CAGGGCTCTG AAGGGAAAAA GCTGGTTTGC TCCAGGTGGG
5451 TGACCTCTCC CTGGGGACTG CCTGGCCCAG GGCCAGGGGA TCCTGGGGGA
5501 GAGTGGAGGT CTGGCCCTGC TCTGATGTTT TGCTGTTCCT AGACCTGGGC
5551 TGGGATAACT ATCTCTGCCT TTTGCCCGTC CCCAGGTCAG CCCCCTCTG
5601 GCCAGGGCCA CACTGTTTCC TCCTGGGCAG AGGAGCCCCA GTGTCAAGGT
5651 TGGGGGGCTG TTTCTCTGTT CTTCTGTCCT CTCCATCGAG GCATGGCCAG
5701 GCCCTTCATG TGTGGCTGCC TCTCGGGACC CCCACAGACC ACAGCCTCTC
5751 TGTCTTTTCC TAATGCAAGG CGGAAATGGC CACAGTGGGG TGTCAGGGCA
5801 CCGTGGACGT GGGGGTGGGG AGCTCCAGGT CACCTTTGTC TCCAGAGGGT
5851 GGGGAGGTTG TAGCAGGAGT AGGGGCTGTA ACGCCTGTGT CTATGCCCCT
5901 TCCACTGGGC TCAACCTTCA ACCCAGTGTG GAAAGTGGGG CATGGGCCGC
5951 CCACCTCCAA GGTCTACCCA GCCTCAAAGG TCCGGCTCGG GTCTGTCTCT
6001 CCGCTGTAG GCCGGGAAGT CACTTGGCCT GCAGGGAGCA CTGCGGGTAG
6051 GGAGGCCGAG GAATGGACCA GGCCCACAGC AGGTGCCTGT GGGGCTCCAA
6101 GGGGCCAGGC TCCCCGAGC TCTCCTGGGG CCAGGAGGGG AGCAGGGACC
6151 TGGCTGGGTG TCTGATGCCC GTCGCACAGC CAGAGCCCTT AAAGCTGCTG
```

FIGURE 3B

Docket No.: CL001099 CIP DIV2

Serial No.: To be assigned

Inventors: Douglas RUSCH et al.

Title: ISOLATED HUMAN KINASE PROTEINS...

```
6201 GAGCCTTGCA GCGGGGCTT TCGGGGAGG GGGTGTAGCT GCGGTGGGTG
6251 GCACGGGGGT CTCCTAGGTA CTGGGCAGAG GCCCTCGAGG TGGTAGCGCC
6301 GGTGGGAAAG GTAGGGATGG GAGGCGGGG TGGGCGGGCC TCAGGTTTCA
6351 GGAGCTTCTC AGATCTGAGG CGCCCATGCC CCTCTCCCAC CTGTGGGCCT
6401 CTCCAGCCCG AGTCCCTGAA GCAGCTCTGG AGGTAATTTT TTTTCTGGAG
6451 GAGGCGGGAG TGAGAAACGG GAGCAGGGTG AGGGTTCCCA AGTGACATC
6501 GGCCCGTCCG CTGCTGGGTG GTGTCCACGG GGGCAGGGCT GGGCTGGGGG
6551 AGGCCAGGGT CCTGGGCCGG CACACCCTCC TTCCGGCTGC CTGTGTCCCT
6601 CCCTCCAGCT GCCTGTGTCC ATCCCTCCGG CCGCCTGTGT CCCTCCCTCC
6651 GGCCCCCTAG CGCCAACTCA TCTTCAGTTC AGGGACCTCC GTCAGGCTCC
6701 CTCACCCAG CACTCAGCAG GAGGCTGCCG GCCTGGGTGT CCAGGGGATG
6751 GTGCGGGTGT CCAGCAGACA GTACAGGGGT TTGGGGGATG GTACAGGTGT
6801 CTGGGGGATG CTGGGGGTGT CCAGCAGATG GCGCAGGGGT TTGGGGGATG
6851 GCACAGGTGT CTGGGGGACA ATGCGGGGGT TTGGGGGATG GCGTGGGTTC
6901 CAGGGGATGG TGCAGGGGCT TGGGGGATGG TGTGGGTTC AGGGGACCGT
6951 GTGGGGGTTT GGGGATGGCG TGGGTTCAG GGGATGGTGC AGGGGCTTGG
7001 GGGATGGTGT GGGTTCAGG GGACGTGCG GGGGCTTGGG GATGGCGTGG
7051 GTTCCAGGGG ACGGTGTGGG GGTTCGGGA TGGCGTGGGT TCCAGGGGAC
7101 GGTGCTCAT CTCCAGTCT CTGTCTCTGC CTTCCCATGG CCACCTCCAT
7151 GTGACTGTGT TCAAATTCCT CACCTCGTAT AAGGACCCTT GTCACTGCGA
7201 TTAAGGACCC CCTACTCCAG GGTGGCCTCA TCTTAAGTCA TTATATCTGC
7251 AAAGACCCCTA TTTCTAGAAA AATTGCAGTC ACAGGTACTG GGAGTCAGGA
7301 CTTGAACCTG TCTTTTGTGG GGACACAATT CACCCATAAT AGATGGTCAC
7351 CCGCTCAGCT GGCTGTGTG ATTTTGGGG GCTGGACGAG CAGGCCCTTCT
7401 GTCTAGGAAA TCAAACCTTT CTGTGATAAT GGGAATAAAT TAATTAAAAT
7451 GCACACAAAG ATCTCGTCA CATTAGCAAA AAGAACTCTC TCCAGATATC
7501 TAGGAGAAAA CCCAGGAAAA CACGTGTGAG CTCCTTACGG GGAAGACGGG
7551 AAGGCCTGAG AGACGTGTGT GCGTGGAGAG GGTGTGCGGT CCACAGAGGG
7601 GAAGACCCAG TGCGTGTGCA CGTTGGCCCC ATGAATCCGC AGCTTCATGC
7651 AGTGGTAGGT CAGTTTTCATG GTGGCAAGAT TCACCTTCAG ACGCCACAAG
7701 GTCCTGGGGA AGAAGAGGTC CTGTCTCCCG ACAAGGGCGG GAAGCAGTCC
7751 CAGGAGCCAC CAGAGGCTT GTCTTGCTGC TGAAGGCAAG AAATGGCCAG
7801 GTTGGCCACG CAGGACTCAG ACCAGGCTCG CCCCAGGGCT GGGTGGGAGT
7851 CAGTGTCCCT GAGCAGTGAG CCCTGAGCAG CACTGTGGGT CTCAAAGCAT
7901 GGAAGGAGTG GGTGCTGGAG AGGCAAGCCA GCCAGCCAC GCCTGGGAGC
7951 CCACCCAGGG GACAGCCACA GGTAGCTGCA AATAATCTTG TCCGGGTGGA
8001 GACCCAGGCA TTCCCACATG GCCACGGGGA AGAGTGGGGG TTGGGAGGCC
8051 ATGTTAGAGG GGAGGGACAC GTGAGGATCA TGTGGGCAGG ACCCAACAC
8101 CACAAGGGTG GGGTGGGCTG AGGCATGAAA CTGGATCTCC CTAGAGTGAA
8151 ATGTAAGCTC CAGCACGCTG GCACCACTGA CGACACAGGA GCCATCAAAG
8201 TCCAGAAGGG GCGCGCTGG GCACGCCCCA CTCTTTCGCC ATGGCTGGTG
8251 CTGGGCAGGG CCGCGGGGCT GCAGTCTGGG TGCAAGGCTC AGAGTCATTT
8301 CTCTGTGGAT AGGGAGGGCA CGGGTGTGCG TTCGCTTCGA GAACCATTC
8351 CAAAGTCAGA CCGCAGCCTC TGACCAACC ATCGGGGGCC AGTGCCGCC
8401 CCCAGAGCCT CAGGACCCCT GTCTTTGAG CCCACGCTA AACCACATG
8451 GGAATGATTT GGAGGCGTGG GTGAGTTGGA TGGGAAAAAA ATTGGGAGGG
8501 GCAAGGGGGG GATCCAGAAT GAAATCCAGA AGCGCAGAAG GAAGGCTGTG
8551 AGGAGCAGTG GGCCGCTCC TGCAGGGCTC CCGGAGCCCC TACTTGTCCA
8601 GGCTGCCTGG TGAGACCCTG GCTTCTGGTG TCCTTGGCAG GTGCCAGCCT
8651 CCCCCGCTGA CCCCCATCAC GAGTCAGCAG CTTACCCAC CGACCAGTCC
8701 CTTCTGCAT TGTCTGCTC TGGCCAGGCC TGTGTTTACA
8751 CTAGTTCTGT CCAGCCCTC CCTGTGAGGC CAGCTCCAGC CCCAGCGCAT
8801 GGTGACCATC CCGTTACCCA TGGGCAGGAT GCACTCCTCT CAGTGGCTGG
8851 CGAGGCGCAG CCTGGTGGCG GCGCCACGGG GTCGGGCTGT GATCGCCTGT
8901 GGCCTCCCTG CAGGGCTGTG ACTCCCTGAC GCAGATCCAG TCGGGCCAGC
8951 TGCAGAGCCG CAGGGCCCAG ATTCACCAGC AGATTGACAA GGAGCTGCAG
9001 ATGCGGACGG GCGCTGAGAA CCTCTACAGG TCAGTGCTTG AGACTGCCCG
9051 GCCCCGGGAG CAGGGCCAC CTGGGTGAGG GGGGCAGGAC AGCCACGCAG
9101 GCAGATGTCT GCCCCATGGC CGGGTCACAG AGACAGGTGC ATGAGCAGCT
9151 GGGTCCTGGT GGGCACGTAG TACACGTGAT GCTCAGCCAT GACCCTCACA
9201 GACCTGCCTC CGTGGGCTC TGTGCTGGG TGGAGGTGCC AGGAAACCAG
9251 TGTCCCTGCC GGGTGTGAG CTTGGGAAGC CCCAACAGTG CACGTGGGGG
```

FIGURE 3C



Docket No.: CL001099 CIP DIV2

Serial No.: To be assigned

Inventors: Douglas RUSCH et al.

Title: ISOLATED HUMAN KINASE PROTEINS...

9301	CTTCTCAGAA	GAGGCATGGT	TGAGGCTGAG	CTGTGGCAGG	TGACGGCGCG
9351	TCCCAAGGTT	GGGGACCTGG	GAGGGGGTGG	AAGACCTGGG	CTGCCCTCTTC
9401	CTTAGAGCAC	ACCGCCTGTG	TGCCACACAT	GTGCGTGTGA	GTGCCCCCTCG
9451	GTCCCCCTTAG	CACCTGCTAC	CTCGCTGCCC	CCATCCTGGC	CTTCCCTGGG
9501	GACCTCCGGT	CCCTTTGCCA	GGCCCTGATG	CAGGCACAGA	GAGGTGTGTG
9551	GCTCTCACCC	ACCATCCAAG	GAGTGATGTT	TGAGTGCTGT	CGAGGGCTGT
9601	ATGAGCCCCA	AAGAAAGCCG	TGGTGCTGAG	GGAGGTGCCC	CCAGGCCAGA
9651	GTCGGAACAT	GCAGGTGCTG	GGGTGCGGGT	GATGAACTGT	AGGGGGCATC
9701	ACCTGTGAGC	CCCCGGATCC	CACTGCTGCC	CCTGCCCCAC	CCATGGGGGG
9751	CAGACCCTGT	CAGCGACGTC	CTCTGCAGGG	TGGGCTTGGA	GCTTTGACAG
9801	GTCAGCTGGC	AGGACGGCTG	CAGTGGGCAC	GGGGCCTTTG	GCTCTGCCCTT
9851	GGGGCTGGGC	TTTCAACTGC	CGCGGCCCTC	CTCAGAGCCA	CCAGCAACAA
9901	CCGGGTGAGA	CAGCGGTGCG	CCCTGGAGCT	GAGCTACGTC	AACTCCAACC
9951	TGCAGCTGCT	GAAGGAGGAG	CTGGAGGAGC	TCAGCGGTGG	CGTGGACCTT
10001	GGCCGGCATG	GGAGGTGCGG	GTGGGGGCGG	GGACAGCACG	TGCGTGTATG
10051	TGTGTGCACG	TGTGCGTGTG	TGTGTGCATG	TGTGTGCACG	CATGTGTGTC
10101	TCTGTGTGTA	TATGTGTGCA	TTGTCTGTGT	GTGTGCGTGT	GTGCATGTGT
10151	GTGCATGCAT	GTCTGTGCGC	GTGTGTCTGT	GTGCATGTGT	CTGTGCATCT
10201	CTGTGTGTGT	GCGTGTGTCT	CTGTGTGTAT	ATGTGTGCAT	TGTGTGTGTG
10251	CATGTGTGTG	TGCATGCGTC	TGTGTGCGCG	TGTGTCTGTG	TGTCTGCATG
10301	TGTCTGTGTG	TGCATCTCTG	TGCGTGTGTC	TGTGTGCACG	TGTCTGCGTG
10351	CGTGTGCATG	TCTGCGTGTA	TGTGGGTGTG	TGTTTGCCCTC	TATGTGTGCG
10401	TGTATGCACG	TGTGTCTGTG	TGTGTCTGTG	TGTGCGTGTG	TGTGTGTGTC
10451	TGCACGTGTG	TGCATATATG	TGTGTGCGTG	CGCATGTGTG	TCTGCATGTG
10501	TATGCACGCA	TGTGTTTTGTG	TGTGTGTGTG	CGCGTGCATG	TGTGTGTCTC
10551	TGTGTGTGTG	TGTTTGCTTT	TGGGGCGGTT	TAGGACGGTG	GGGGGTGGTG
10601	CACAGGTGCA	AGGATGCCCC	CCAGGACACA	GGCGCACGTG	CACACCCATG
10651	AGGGAGGGAG	GCACCCTGTG	CCACAGAGCC	CTAGGAGTGG	ACCCCGGGCT
10701	GCCGTGGGCA	GCAGGGTTTG	GCCTTACAGT	CTGAAGTCGA	TGCTTCTGGT
10751	TACAGCGAAG	CTGTCACTGT	CCCCATGATC	CCCCCTGGGC	TGAAGGAGAC
10801	CAAGGAGCTG	GACTGGTCTA	CACCGCTGAA	GGTAGGTACT	GGCCTCCAAG
10851	CTCTGAGATA	CACGCCCTGT	CCCTGGGACC	AAGGGGTCTT	TGGAGGCTTT
10901	CTGGTCCAGC	TGTCTGTTTG	AACAGATAGG	GAAACTGAGG	CCCAGAGGGA
10951	GGGAGGCTTA	AAAGGGACGC	AAGGGACCTG	GCAGAAATGG	CCACAGGGAC
11001	CCAGCCTCTG	CTGCGTTCAG	GGCCCCGCTG	GTGCCTGCGC	CCCAGGCCGG
11051	GGCTGATCCC	ATAGAGTGGG	TGTGAACATG	TGCCCTACCC	TCGGATGGGC
11101	AATGCCCTAG	GAGGATGGGG	CCTGGAAGCC	CCAGCCGGAG	CACAGGGTAC
11151	AGGCTCGCCC	ATGAGGGGCA	CCACTGGCTT	GGGGCCACAC	ACCCAGCACT
11201	GGCTCACGAG	GGTCCTGGGG	AGAGCTAGAA	CAGACTGGCA	CTGCCTGGCA
11251	GGGCCCCACG	GGAGCCACTG	ACTGTGTTCC	GTGTCCGAGT	CACTGAGTGG
11301	CAGATGGCAC	CTGCCCTCCG	GCCACGGGGA	TGAATAAGGA	AACGCACGTA
11351	AAAGTAGCGC	TGAGTCTCCA	GGCCCCGCTT	CTGTGATGGG	GTGGGGAAAC
11401	CCCAGGGCCA	CAGGGGCTCC	GACCCGCATC	AACCCACCAG	GCCCCCTCCAT
11451	ACACATTGGC	CCCCAGCCCT	TCTCTGGGGC	TTCCACTGAG	GGGGCCAGGG
11501	CCCCCACGCT	GCATGGCAGC	CAGCCTGCTC	TGCGGCACAG	ACCCTCCCTC
11551	CACCATGAGT	CTTTTCCCAA	GGTGGGTTGG	GAGACCTCAG	GGAAGGAGGC
11601	CAGGCACAGG	GGTACTGTGG	ATGCCAACAC	CTGCCCCCCA	TCAGGAGCTG
11651	ATCTCAGTGC	ACTTTGGAGA	GGACGGCGCC	TCCTACGAGG	CAGAAATCAG
11701	GGAGCTGGAG	GCCCTGCGGC	AGGTGTGTGG	TTCCCCCGCC	CACCCACCCT
11751	CCTGCAGCCC	TGGGAGACAC	ATGCAGAGGC	TGAAGCTGAA	GTCAGGAACA
11801	GACAGAGGAG	CTCAGCGTAG	ACATCTCGAG	GACGTGGGGA	GACGGGCGCA
11851	CCAGGGGGCC	TGTGTGTCCA	GACCCAGCCA	GGGGGCGTGG	AGGGGCTCCC
11901	AGGTGGCTCC	GGTGCCGCAT	GCTGCTGGCC	TTCGGGAGTC	ACGGCTGCCC
11951	AGGGCCCCAC	TGGCTTTGCC	TCCCCGCCCC	CCATGGTGCT	GGTGCCCATG
12001	GGACTTCCCA	GGGCAGTGTG	TGTGAGTGGG	GTGGGCCAGG	GCGGTGGGGC
12051	CCAGTGGCTC	CTGCCCCGCA	GGCCATGCGG	ACCCCCAGCC	GGAATGAGTC
12101	GGGCCCTGGG	CTGCTCACAG	CCTATTACAA	CCAGCTGTGT	TTCTTGGATG
12151	CGCGCTTCCCT	CACCCCTGCC	AGGAGCCTCG	GGCTCTTCTT	CCACTGGTAG
12201	GGGCTCTGCG	GGCGGAGGCA	CCCTGGGGAG	GGGAGGCCCA	GCTGCGGGAA
12251	CCGTGGGAAC	TCCACCCAGC	CTGACCCAAC	ACTGCAGGTA	CGACTCGCTT
12301	ACTGGGGTCC	CGGCCCAGCA	GCGTGCCCTG	GCCTTCGAGA	AGGGCAGCGT
12351	TCTCTTCAAC	ATCGGTGCCC	TCCACACGCA	GATTGGGGCG	CGCCAGGACC

FIGURE 3D

Docket No.: CL001099 CIP DIV2

Serial No.: To be assigned

Inventors: Douglas RUSCH et al.

Title: ISOLATED HUMAN KINASE PROTEINS...

12401	GCTCCTGCAC	CGAGGGTGCC	CGCCGCGCTA	TGGAGGCCTT	CCAGAGGGCC
12451	GCTGGTGAGG	GCGGCCCGGG	CCGCGGTGGG	GCACGGCGCG	GTGCCAGGGT
12501	GTTGCAGAGC	CCCTTTTGCA	GGGCAGGAGC	TGGGGAGTGG	TTAGGACATC
12551	AGTCCCTCAG	GTAGGGGGAG	TGAGCACATC	AGGTCCATAT	GTGTCCCAGG
12601	AGCATCCCTA	GCTGGCCGCC	CTGAGTGCTG	CATGGGGCAG	AGATGGGCAG
12651	GTACAGGGCC	CTGCCTGTGT	GAGCACCCCT	CCCTCCGCAG	GGGCCTTCAG
12701	CCTCCTGAGG	GAGAACTTCT	CCCATGCGCC	GAGCCAGAC	ATGAGCGCTG
12751	CGTCCCTCTG	CGCACTGGAG	CAGCTCATGA	TGGCCAGGC	CCAGGAATGT
12801	GTGTTTGAGG	GCCTCTCACC	ACCTGCCTCC	ATGGCCCCC	AAGACTGCCT
12851	GGCCCAGCTG	CGCCTGGCGC	AGGAGGCCGC	CCAGGTGAGC	TCGGGCACCC
12901	GTGTCAGGAT	GCAGGGGGTG	GGGCCGAGCT	GGGGTCAGAG	CCCAGGTCCA
12951	GGCATGCGTG	AGCTCTCCCA	CCTCCTTCCT	TGTGTGTCAG	CCCCGAGCCA
13001	GCTGTTGTTC	TGCTCCCTGG	GGGGGCTGGT	CAGGAACCTG	GGGACCCGAG
13051	CCTCTGCTCC	CAGGGGATGG	CACAAAGCAG	CAGGAACTGA	GGTGCCAGGG
13101	AGGCTGCTGG	GATGGTGGTC	GGAGCAGGTG	GAGGCTGGGT	AGGGAGAAGC
13151	AGGCACCACC	TGGAGAGTGG	GAGGCCCTCG	CGTGCCTGCC	ACATCCACCG
13201	GCAGGTGGCA	GCCGAGTACA	GGCTAGTGCA	CCGGACCATG	GCCCAGCCAC
13251	CCGTCCACGA	CTACGTGCCT	GTCTCCTGGA	CTGCCCTGGT	GCATGTCAAG
13301	GCCGAGTACT	TCCGCTCCCT	GGCCCACTAC	CACGTAGCCA	TGGCCCTCTG
13351	CGACGGCTCC	CGTAGTGCC	CACCGCACTT	GCCCATGGTA	CTGCCAAGGC
13401	CCCCCGCGC	AGGGCTCACA	GCCTCTCTGT	CCCCCAGCAG	CGACCGAGGG
13451	AGAGCTCCCC	ACGCACGAGC	AGGTCTTCCT	GCAGCCCCC	ACCTCCTCTA
13501	AGCCCCGAGG	CCCTGTGCTG	CCGCAGGAGC	TGGAGGAGCG	CAGGCAGCTT
13551	GGTAAGGCGC	CCATGGGTGG	AGTGCCCTGG	GGCTCAGATG	GTCACCAACG
13601	GTGGCAGGGT	GTCCCCCACC	ACCTCATGTC	TGTTTGCCAC	CTGCTGTCCC
13651	CGTGCTGAGC	AGTTGGGCCA	CCTACCTATC	CCTGGATGGC	CTGTGCCTGA
13701	TGGGTGACGG	CCCAGCGCAG	GGGCCCCAGG	AGTGCTGGGC	AGCCTCTGAG
13751	CAGGTGGGAG	ACCACTGGGA	GCAGCTCATC	CCTGGCCCCT	GCTTTGCACG
13801	TGGCAGAGCC	CTCCTGCACA	GCCAGCTCCT	CACCCCGGTG	GCGCGCACCC
13851	CCAACGAAAG	TGGCTGTGAT	GAGCCCCACA	GCCCTGGCGT	TGCCCACTCC
13901	TTCTGCCACG	TCCCAGGGCC	CACGGGCCCA	CATGGTGTGT	GACATCCCAG
13951	TGCCCCGCGT	GCAGGCAAGG	CACACCTGAA	GCGTGCCATC	CTGGGGCAGG
14001	AGGAGGCGCT	GCGGGTGCC	GCCCTGTGCC	GCGTCTGCG	CGAGGTGGAC
14051	CTGCTTCGGG	CTGTGATCTC	CCAGACGCTG	CAGCGCTCAC	TGGCCAAGTA
14101	TGCGGAGCTC	GACCGTGAGG	ATGACTTCTG	TGAGGCTGCC	GAGGCCCCCG
14151	ACATCCAGCG	TGAGCAGCCA	GGGCCTGTCT	GGGTGGCTGC	ATCCCTGGCC
14201	AGGGTGGGGG	CCTTCGTCCCT	GGAGAAAGGG	AGGCTGATTG	CATTAAAGAT
14251	GCAGTCACCA	CGATGAATTA	AACAGCAGTA	GCACTTTCCA	GGCCACGATC
14301	ACAGGGACCC	ACAGAGCTGC	TGGGCCCTTC	AGGGGCCTGG	GGGATGACCA
14351	CGCTCCTCAG	CACCTCCCTC	CCTGCACTGG	CCTCCTACCC	TGAGGGGAAG
14401	CCCACAGACC	CAGGACAGGC	ATGGCTGGGA	CTTCAGGGAG	GGATTTTGGG
14451	AGCCACTTGG	GGCAGAGGGG	GCTGTGTGTT	CAGGGCACAC	CTGGGGCAGC
14501	TCCTCCCACC	ATTGCAGAGT	GGCCAGGCCT	GGAGGTCAGA	AGCGGGGCCT
14551	GTGTGCACTC	AGGGTCATGC	CCTGCGCCCT	GGAAAATCCC	CGAGGCAGGT
14601	CTCCACAGTC	TCCCAGCTTA	GCTCTGCTCT	TACACCCTCT	CAGCTAAGAC
14651	CCACCAGAAG	CCAGAGGCCA	GGATGCCACG	CCTGTCCCAG	GGGAAGGGGC
14701	CTGACATCTT	CCATCGGCTG	GTGAGCACAC	CCGTCCCCAG	GCACCGCCCA
14751	GCATGGGCAG	CTTGGGCTGT	GTGGCTCTGA	CCAGCACATG	GCCTCAGACA
14801	GGCCATTGAT	GGTGGTCCAG	CCCTCCCCAC	CCACCTTGTG	GAACCCACG
14851	GTGTCCCTCG	GTGCACAGGT	TGGATGGATG	TGCTAGTCAG	GTGGGGTCTC
14901	CTCAGTGTGT	GGCCAGCTG	GGCCTCTGAG	CTCTGAGCCC	CTGCCAGGGG
14951	CCCCTGTCTG	TGTTCTCAGC	CAAGAACCAG	TGGCGGCTGG	TGGGGCCCGT
15001	CCACCTGACC	CGAGGAGAGG	GCGGCTTTGG	CCTCACGCTT	CGGGGAGACT
15051	CGCCTGTCCCT	CATCGCTGCC	GTCATTCCAG	GGAGCCAGGC	CGCGGTAAGG
15101	GCCCCGCCGG	CCCCCTGAGG	CTGAGTCCTT	GGTGCCAGCC	AGGGTGTCTT
15151	GTCCCCACCT	CACCGTCCAA	GTCTCCCCAC	AGGCGGCTGG	CCTGAAGGAG
15201	GGCGACTACA	TTGTGTCACT	GAATGGGCAG	CCATGCAGGT	GGTGAGACA
15251	CGCGGAGGTG	GTGACGAGC	TGAAGGCTGC	GGGAGAGGCG	GGCGCCAGCC
15301	TGCAGGTGGT	GTCGCTGCTG	CCCAGCTCTA	GACTGCCCAG	CTTGGTGAGC
15351	CCCTGGGGCC	CCAGAGGGGC	GGTCCCCAGC	TTGCTGTCAC	CACCTTGGCC
15401	CTGGGCCTGC	CTTGGATGCT	TGAGCAACAT	TGGGAAGGGG	AGGTGGGGCT
15451	GCAGGTAACC	CTCCCTGGGC	CGCCTCCTGG	GCAGGGGCCA	CCTGTGCTGT

FIGURE 3E

Docket No.: CL001099 CIP DIV2

Serial No.: To be assigned

Inventors: Douglas RUSCH et al.

Title: ISOLATED HUMAN KINASE PROTEINS...

15501	GGCCTCCATC	TGGCAGCTCT	TGCCCTGACC	CCGAGGATGC	TGCAGCCCAC
15551	CCCTCACTGG	GCCTCTGTAT	CCTCAGACTG	GAGGCTTCTG	GGCCAGGCGC
15601	TCCATCCCAG	AGGTTTTCTC	TACCCAGCAT	GGCTGACCCA	GGGTGGGTG
15651	AAACCCATGG	GGCCCTGCTA	TGTGGCCACC	CTGATGGGAG	CCCCAAACA
15701	AGCCCCGAC	GTGCCAGCCC	CTCCAGGTG	GTTCCTACCC	CTCCAGACT
15751	GGTGCAGGT	GGGGACAGGC	CAGCAGTGGC	TGACCACAGT	CTGTCTCTGT
15801	CCCTGCTGCA	GGGGGACCGC	CGGCCCGTCC	TGCTGGGCCC	CAGGGGGCTT
15851	CTAAGGAGCC	AGAGGGAGCA	TGGTTGCAAG	ACCCCGGCAT	CCACGTGGGC
15901	CAGTCCCCGG	CCCCTCCTCA	ACTGGAGCCG	AAAGGCCCAG	CAGGGCAAGA
15951	CTGGAGGCTG	CCCCCAGCCC	TGTGCCCCAG	TGAAGCCAGC	TCCGCCCTCA
16001	TCCTTGAGAG	ACCCAGGGTG	GCCGTGAGGG	CCAGGATCCC	TGCACGCCCTC
16051	AGCCCTGGCT	CCAGCTGGCA	GCAAGCACCG	AGCATGCCCT	CCCCACCCAG
16101	AGGACTCCCG	GGCAATGCCT	GTCCCGCCTC	ATGCTGGAGG	CTGCCTCGGG
16151	CACCTGCTCG	CCCATTAAG	ACTGGTCAGA	CCTGTCTGAG	CCCAGTGATG
16201	GGAGCTGTGG	CCTCTTCACC	CACACACAGA	AGGATGCCAG	TCCCTCTGTC
16251	GGTCTGAGGT	CAGCTTCCTG	GGGCTGCCCC	ACCCTGAGGG	CTCCTTACAG
16301	GGTGCTCCTC	ACAGCCATCC	CATCTGTACC	CCCGGGCTCT	GTCCACCCCTG
16351	CTGCTGCCCT	GGGCACAGAC	CCTGAGGTCT	CAGTCCTGCC	TCCAGCCAAG
16401	TTTCTGCCTG	GTGCCCAGTG	ATTCTTGCTG	GGCACCCTT	CGCTCACTGC
16451	CCCTCCACCA	TGCAGCAGCC	AGACACACCC	ACAGCACCCG	AAGACCTCTA
16501	GGCCGGGTCC	CAGACATGGC	CTTCCCCCAA	AATACTTCCT	GCTGTCCTGT
16551	CTGTGCACAG	AGCAAGGGAC	TCCCCACCTC	TGCGCCCTGT	GCTGGTCATC
16601	ATGGGCTCTG	TGCTGGTCAA	CCCAGCAAGT	GTCCCCTTTG	CCCAGGAGTC
16651	CCTGGTGTCG	TGGCCCAGGT	CTCATGGTGG	CCCTAAGCCT	GCCAGCCCTG
16701	CTGCCCCGCT	TGCTGTCTCT	CTCTGAGCAT	GGGTGCCACC	CTCCAGCTCC
16751	TGGGCTGTGC	ACTTCTCTCT	GAGCCTGGGG	CCTGCATGGG	CCCCCAGCCC
16801	TCCCCAGCCT	GCTTGGGCCG	CTCCTGCTGG	CCTCCACAGG	CCGTGAGCTG
16851	TCAGTGTCTC	AAGCAGGGGA	AGTGAGGGCT	GCCTCCAGGC	CTCCGTGTAC
16901	TGGGTGGACA	ATGGCCCCCA	AAGGCCGTCG	GCAAGAACAC	CACCTCCAGG
16951	ACCCCTACAG	CAGTGGGCTC	AGGACTTGGG	CACCAAGAGG	AGAGGGTGGG
17001	AAGGGCTGCA	GAGTCAGGGC	TGCACCCAAG	AGGAGCCACG	GAGCCGGAGC
17051	CGGAGCGGAG	GCCCCACCG	AGGGCCCCAG	GGCCTGGCAG	GTTCCGGAAG
17101	AGACAGGGCC	AGCGGGAGTC	ATTCCCTGCA	GCCACTAGGG	GGCAGCCGCC
17151	ACCCGCTCAG	CAGCCCTGGG	AGGCGGCACG	GGCAGGTGCG	CCTTGGGAGG
17201	GCTGAGGCAA	AGACCCCGGG	TAGAAAGGCG	GCCCCCAGCT	CTGCGAGACC
17251	CCTGCCCTCT	TGTCCAGTCC	CTTCCGAGGG	TCCGCAGGTG	AGAGCAGCCT
17301	GCCCTGCATC	CCAGGCTCTG	GTTCACAGGT	CCAGGGCCCT	GCGCTGCCAC
17351	CTCCCTCGTG	CTTCAGCCAA	GAAAATGGGG	GTGCAAGTAG	GGTGTTTGGG
17401	GTCCCCAGAGA	TGCAGGCGCC	GCGGCGCGAT	CTTCCTGGGG	AGGAGGGCAG
17451	GGCTCCCCAA	CCTGCCTGAG	CCGGGGTGGG	GGTCCAGGTC	CCCCACTTGC
17501	CCTTGTTGGA	AAATCCCTGT	CTCAGCAGAA	TGGGCCAAGG	TCACGCAGGT
17551	CTCCCCAGCA	CGTGTTAATT	TGGTTAATAA	AACTGTGGAT	CAAGGAGGCC
17601	AGTAGGCACT	AACTGGGGAT	GACAGGGTGG	CAGCCCTGTC	TGGGAAGTGC
17651	AGGGACTCCC	CACCTCCTGT	GGCCTGTCTG	GACCCAAGCT	GGGGACAGAG
17701	CTGCCACCTG	CCTCTGCAT	GGTGGGCGCC	AGGCCACCAT	AGCCTGGGGG
17751	AGGGGGCTTT	TGCCCAGAGA	GCACGCCTCT	CCCCACCGCA	GACCCCTGGG
17801	GTGCGCCCAA	CCCGTCCCAC	CCCTGCCCAC	ACATGCCTCT	CCCCTGGCTG
17851	CCACCAAGCC	TGGGCCTGTG	CTCCTGGCCC	TGCCCTCTGC	CCCAGGCCAT
17901	CTCCTCCCTT	GCTGCCCCCC	CCCCCGCCGT	CGTGTCCCTC	TGCCACAGAG
17951	GGGGGGCCTC	ACAGCTGAAG	CCACACGTGG	CTGGGACCTG	GCTCCCGTCA
18001	CCGCCTCCGT	CCTGTGAAGT	GGAGGAAGCC	TGGTGCACAG	GGGTGCTGTG
18051	GCGATGTGGG	GGGCCCTGAG	GTCCTGCTGC	CAGCCAGGGG	GAGGGGGGCG
18101	GAGGTCTCTG	GATCTGGGGT	CCAGAGTTCT	AGTCAAGGCA	GGGCTGGGCA
18151	GGAGGGGGGT	CCCCCTCCCC	ACCTTCCACT	TGGGGCTGCT	CTCCAGAAGA
18201	GAAAGCGGAT	GCCTACCAGC	CCAGCCCCCTC	AGACTTGAC	CATGCCCTCTC
18251	CGGCATCTGT	GGGAGTCCTG	CCAGACAGCC	CCTGGGCTGC	GGGAAGGGAC
18301	CGCGCCCCAT	CCCATCCTCA	TCCCTGCAGT	AGCTGGTGGC	TGCCTGCCCCG
18351	GCGCAGGGGC	CTGTGAACA	GGGGACTGCC	CTGTCCAGCC	CACCCACGGG
18401	ACTCCAAGTC	CACACAGGCA	GCAGAGTCGG	CAGCGGTGGG	CAGAGTGGGG
18451	GGGCATCACC	ATGGCTCCTC	AGGGACTGGT	CAAGGGTGTG	ATGCCTGGCC
18501	TGGCAGGACC	TGCAGTTTCA	CCCCCGGGGC	CAGCTGTGGC	CTGTGCCCCG
18551	CCAGAGGGCA	GTGCAGCCCC	TGGGGCCAGC	ACACAGGAGG	CGGCAGCTCA

FIGURE 3F

Docket No.: CL001099 CIP DIV2

Serial No.: To be assigned

Inventors: Douglas RUSCH et al.

Title: ISOLATED HUMAN KINASE PROTEINS...

```
18601 GGGTCCTGTC CCATCTGCCC AGGCTAGGGA GCAAAGCAGG ATCAGGGCGA
18651 GGCTGCGAGG CTGGGGGAAG GCAGGGCTGG CCGCTGGGGA GCGCTCGGTC
18701 CGCAGGCTGT GCGGTGAGAG CCACTGGGTG AGGCTTCCCG GGGGGCACAG
18751 CTGCCCCGAG GGGCCGGCTC AAGGCTGTCC CTGCAGCAGC ACGTGTGGT
18801 GCTTGCCCTGC CCCCCCGCA GCGCCACACC GCGGCCTCTG TGGAGCCCGT
18851 TCTCTTCCCT TGAAGTCCTG CTTGCGCACT CCTGGGCGTT TCTGGCTAGC
18901 ACCTTTTGG CTTTGTAGGA CGGGTTAGTG TCCCTTCCTC AGATGGCCCG
18951 GCCTGGACAC ACCCCATGCA TGGGCCTTAG CCCCCACTTT CTGGGCCAGC
19001 CTTATCACTT TGGGCACTGT GTCAC (SEQ ID NO:3)
```

**FEATURES:**

```
Start:      3000
Exon:       3000-3059
Intron:     3060-7495
Exon:       7496-7654
Intron:     7655-8913
Exon:       8914-9029
Intron:     9030-9885
Exon:       9886-10014
Intron:     10015-10755
Exon:       10756-10831
Intron:     10832-11644
Exon:       11645-11722
Intron:     11723-12071
Exon:       12072-12196
Intron:     12197-12287
Exon:       12288-12454
Intron:     12455-12690
Exon:       12691-12884
Intron:     12885-13204
Exon:       13205-13361
Intron:     13362-13437
Exon:       13438-13551
Intron:     13552-13964
Exon:       13965-14159
Intron:     14160-14643
Exon:       14644-14720
Intron:     14721-14947
Exon:       14948-15094
Intron:     15095-15182
Exon:       15183-15344
Intron:     15345-15811
Exon:       15812-16024
Stop:       16025
```

**CHROMOSOME MAP POSITION:**

Chromosome 8

FIGURE 3G